

ADDITIONAL MATERIALS TOWARD A MONOGRAPH OF THE GENUS
CALLICARPA. XII

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CALLICARPA CANDICANS (Burm. f.) Hochr.

Prain (1903) tells us that this species is "often cultivated; occasionally naturalised in C[entral] Bengal. A large shrub; native of the Malay peninsula", called "arusha" in Bengal. Uphof (1968) reports that in Hindu medicine a decoction is made of the roots, leaves, and bark and that this is used in the treatment of skin diseases, parts of the plant are employed as an arrow-poison, and in the Philippines a decoction of the leaves is used as a fish-poison.

Vidal y Soler (1885) cites Cuming 1283 from the Philippine Islands, while Chang (1951) cites C. I. Lei 731, as well as nos. 139, 315, 873, 1026, 3379, 4049, 4837, 5975, 26009, 27239, 33351, 61557, 61931, 64567, 65228, 66541, 71432, & 72432 of collectors and/or herbaria whose names, unfortunately, he gives only in Chinese characters. For some reason unknown to me, Chang includes C. americana Lour. in the synonymy of what is now known as C. kochiana Mak., but most authorities, including myself, regard it as conspecific with C. candicans (Burm. f.) Hochr.

The H. H. Bartlett 14711 and Kjellberg 96, distributed and in the case of the latter also cited by me as C. candicans, are actually C. bicolor A. L. Juss., H. H. Bartlett 14698a and Quezon 1 [Herb. Philip. Forest. Bur. 30258] are C. erioclona Schau., and B. C. Stone 3931 is C. erioclona var. paucinervia (Merr.) Moldenke.

CALLICARPA CANDICANS var. SUMATRANA (Miq.) Moldenke

Additional bibliography: H.-T. Chang, Act. Phytotax. Sin. 1: 308. 1951; Hocking, Excerpt. Bot. A. 12: 423 & 424. 1967; Moldenke, Phytologia 15: 20. 1967; Moldenke, Biol. Abstr. 49: 4199. 1968.

CALLICARPA CATHAYANA Chang

Additional & emended bibliography: H.-T. Chang, Act. Phytotax. Sin. 1: 300, 305, & 312. 1951; Moldenke, Phytologia 14: 140. 1966.

Chang (1951) describes this species as follows: "Frutex circ. 1.5 m altus. Ramuli graciles teretes pallide cinerei, hornotini sparse stellato-lepidoti vel glabrescentes, annotini glabri sparse lenticellati. Folia membranacea ovato-lanceolata, 4--7 cm longa, 1.5--2.5 cm lata, basin versus abrupte longe attenuata, apice acuminata, in parte 3/4 susperiore densissime serrulata, supra viridia sparsissime puberula et rubro-punctata, subtus paulo pallidiora glabra dense rubro-punctata; nervi utrinsecus 5--7 supra conspicui subtus elevati fere recti ascendentes prope marginem arcuato-anastomosantes; petioli 2--4 mm longi. Flores violaceo-purpurei in cymis gracilibus ter dichotomis paucifloris 1.5 cm

latis, stellato-lepidotis, pedunculis 5--7 mm longis, pedicellis 2 mm longis aggregati; calyx 0.8 mm longus, truncatus, ut corolla et antherae rubro-punctatus, lobis inconspicuis; corolla 2 mm longa, lobis 0.5 mm longis; stamina paulo exserta, filamentis tubum corollae subaequantibus, antheris circ. 1.5 mm longis poro apicali dehiscentibus; ovarium glabrum, stylo stamina superante. Fructus purpureus 1.5 mm diametro."

The species is based on S. H. Chun 2171 from Canton, Kwangtung, China, deposited in the herbarium of the Botanical Institute, Sunyatsen University, Canton. Chang (1951) cites also H.-T. Chang 3560, J. M. Gilchrist 76 & 205, H. Y. Liang 61398, W. T. Tsang 21346, T. M. Tsui 450 & 601, and C. Wang 30145 from Kwangtung, S. K. Lee 81099 from Kwangsi, S. K. Lau 4409 and H. M. Mo 20966 from Kiangsi, and W. C. Cheng 1027 and Y. C. Keng 2382 from Kiangsu. He states that the species is related to C. bodinieri var. giraldii (Hesse) Rehd., C. dichotoma (Lour.) K. Koch, and C. japonica var. angustata Rehd., with which taxa he compares it.

CALLICARPA CAUDATA Maxim.

Additional bibliography: Moldenke, *Phytologia* 16: 363. 1968.

Sayers describes this plant as an erect shrub, found in regrowth at the sites of old village gardens in New Guinea, producing deep-mauve fruit. The corollas are described as "lavender" on H. H. Bartlett 13211 and as "pale-mauve" on Sayers N.G.F.21499. The E. D. Merrill "7115", cited in *Phytologia* 15: 20 (1967), is an error in transcription for E. D. Merrill 8117. The Mearns & Hutchinson s.n. [May 1906], distributed as C. caudata, is actually C. merrillii Moldenke.

Callicarpa merrillii may be distinguished readily from C. caudata by the simple hairs on the lower leaf-surfaces, but the two taxa are obviously closely related.

Additional citations: WESTERN PACIFIC ISLANDS: PHILIPPINE ISLANDS: Bohol: M. Ramos s.n. [Herb. Philip. Bur. Sci. 43310] (W-1292598). Luzon: H. H. Bartlett 13211 (Mi). MELANESIA: NEW GUINEA: Northeastern New Guinea: Sayers N.G.F.21499 (Mi).

CALLICARPA COLLINA Diels

Additional bibliography: H.-T. Chang, *Act. Phytotax. Sin.* 1: 299, 301--303, & 312. 1951; Moldenke, *Phytologia* 14: 147--148 (1966) and 16: 453. 1968.

Chang (1951) cites only the type collection of this taxon, comparing it with C. rubella Lindl. and C. brevipes (Benth.) Hance. He maintains C. brevipes f. yingtakensis P'ei as a valid taxon, citing the type collection and also nos. 145 & 52981 of collectors and/or herbaria whose names he gives only in Chinese characters.

CALLICARPA DENTICULATA Merr.

Additional bibliography: Quisumbing, *Sympos. Ecol. Res. Humid Trop. Veg.* 35. 1965; Moldenke, *Phytologia* 16: 363 & 373. 1968.

CALLICARPA DICHOTOMA (Lour.) K. Koch

Emended synonymy: Callicarpa dichotoma K. Koch ex H.-T. Chang, Act. Phytotax. Sin. 1: 271, 288, & 307. 1951.

Additional & emended bibliography: Shirasawa, Bull. Coll. Agr. Tokyo Imp. Univ. 2 [Jap. Laubh. Winterzust.] 269, pl. 10, fig. 9. 1895; Lév. in Fedde, Repert. Spec. Nov. 12: 182. 1913; Kanehira, Formos. Trees, ed. 2, 642--643 & 716. 1936; T. H. Everett, Cat. Hardy Trees & Shrubs 16. 1942; H. N. & A. L. Moldenke, Pl. Life 2: 83. 1948; Hottes, Book of Shrubs, ed. 5, 167. 1950; H.-T. Chang, Act. Phytotax. Sin. 1: 270, 271, 280, 288, 294--295, 305, 307, 310, & 311. 1951; Hottes, Book of Shrubs, [ed. 6, pr. 1], 167. 1952; Core, Pl. Tax. 402. 1955; Hottes, Book of Shrubs, [ed. 6, pr. 2], 167 (1958) and [pr. 3], 167. 1959; E. L. D. Seymour, Wise Gard. Encycl., ed. 6, 211. 1963; J. Bush-Brown, Shrubs & Trees Home Landsc. 72 & [205]. 1963; Radford, Ahles, & Bell, Guide Vasc. Pl. Carol. 282 & 283. 1964; Ohwi, Fl. Jap. 763--764. 1965; Thornberry, U. S. Dept. Agr. Agric. Handb. 165: 478. 1966; Tingle, Check List Hong Kong Pl. 37. 1967; Ornduff, Reg. Veg. 50: 86 & 124. 1967; Glasau, Sommergr. Ziergeh. 64. 1967; E. Lawrence, South. Gard., ed. 2, 186. 1967; Hocking, Excerpt. Bot. A. 11: 205. 1967; Moldenke, Phytologia 16: 363--364, 377, 378, & 451. 1968; Moldenke, Résumé Suppl. 16: 17 & 19 (1968) and 17: 7. 1968.

Additional & emended illustrations: Shirasawa, Bull. Coll. Agr. Tokyo Imp. Univ. 2: [Jap. Laubh. Winterzust.] pl. 10, fig. 9. 1895; Hottes, Book of Shrubs, ed. 5, 167 (1950), [ed. 6, pr. 1], 167 (1952), [ed. 6, pr. 2], 167 (1958), and [ed. 6, pr. 3], 167. 1959.

Chang (1951) cites the K. Koch reference in the literature of this species as "2: 336" and he regards C. taquetii Lév. as a synonym of C. dichotoma, whereas I classify it as C. japonica var. taquetii (Léveillé) Nakai.

Sykes describes the corollas of C. dichotoma as "mauve" and the fruit as "purple, globose, shining", questioning whether his no. 202/66 is the "same plant as no. 156063". Santamour (1967) gives its chromosome number as $n = 18$.

Tatnall (1947) notes that the species was "escaped and well established in a swampy thicket along Lee's River, Wilmington. Locality long since destroyed". Radford, Ahles, & Bell (1964) aver that it is "rare in bogs" in Henderson County, North Carolina, flowering there from July to frost and fruiting from September to frost. Additional vernacular names for the plant are "ko-shikibu" and "purple pearl", the former recorded from Japan, the latter from Hongkong. Ohwi (1965) gives its distribution as "Honshiu, Shikoku, Hyushu, Korea, Ryukyus, Formosa".

Thornberry (1966) implies that the following fungi are known to (or may) attack this species: Atractilina callicarpae Dearn. & Barth., Botryosphaeria callicarpae Cke., Cercospora callicarpae Cke., Coniothyrium callicarpae Cke., Meliola cookeana Soeg., Nectria cinnabarina Tode, and Physalospora obtusa (Schw.) Cke., although it seems most probable to me that most, if not all, of

these records apply to the native C. americana L.

Ohwi (1965) records the name "murasaki-shikibu zoku" for the genus Callicarpa as a whole and keys out the Japanese species known to him as follows: [nomenclature brought up to date]

1. Plants glabrous or thinly pubescent; calyx glabrous, with very short teeth.
2. Leaf-blades caudate, glandular-dotted on both surfaces.....
C. japonica var. luxurians
- 2a. Leaf-blades acuminate to acute at the apex, glandular-dotted on the underside only.
3. Cymes supra-axillary; anthers broadly ellipsoidal.....
C. dichotoma
- 3a. Cymes axillary.
4. Corolla 1 mm. long, not glandular-dotted; branches slightly 4-angled; leaf-blades with 12--14 pairs of secondaries.....C. takakumensis
- 4a. Corolla 3--5 mm. long, glandular-dotted; branches terete; leaf-blades with only 5--9 pairs of secondaries..
C. japonica
- 1a. Plants densely soft-pubescent to villous; calyx pubescent, 4-fid.
5. Leaves 5--10 cm. long, rounded to obtuse at the base; branches and leaves with whitish stellate hairs less than 1 mm. long; calyx-lobes lanceolate; flowers 4--5 mm. long, about 10 in a cyme; anthers 1.5--2 mm. long.....C. mollis
- 5a. Leaves 15--30 cm. long, gradually narrowed at the base; branches and petioles with pinnately branched hairs 1.5--3 mm. long; calyx-lobes linear; flowers about 1.5 mm. long, very many in a cyme; anthers about 0.7 mm. long.....
C. kochiana

Chang (1951) cites Courtois 5693, J. M. Gilchrist 107, T. Hai 281, Matthew 4854, McClure 20556, and T. M. Tsui 395 & 666, as well as nos. 112, 251, 589, 682, 815, 1197, 1243, 1791, 2491, 2498, 2749, 2766, 4012, 4521, 4541, 4546, 5127, 5201, 6394, 7217, 7260, 7778, 8269, 9709, 9882, 10653, 13532, 20407, 20751, 21075, 21911, 22939, 23862, 24679, 29682, 30621, 31464, 32487, 42071, 44032, 52729, 53808, 67086, 67139, 67155, 74855, 83642, 84702, 96330, 105193, & 130045 of collectors and/or herbaria whose names, unfortunately, he gives only in Chinese characters.

The E. D. Merrill 11112, Onashi & Sohma 10018 [Herb. Univ. Tokyo 11023], and Tsang 21346, distributed as C. dichotoma, are all actually C. japonica var. angustata Rehd., while Chiao 2617 is C. japonica var. rhombifolia H. J. Lam and C. Ford s.n. is C. nudiflora Hook. & Arn. Tsui 601 appears to be a mixture of C. dichotoma and C. japonica var. angustata.

Additional citations: WESTERN PACIFIC ISLANDS: JAPAN: Honshu: Okamoto s.n. [Sept. 9, 1941] (Ws); S. Suzuki s.n. [Oct. 2, 1951] (Se--141360); Togasi 380 (Se--147224). CULTIVATED: Japan: Togasi

1667 (Se--202650). Maryland: Cowgill 960 [F. H. B. 76216] (Mi).
New Jersey: A. L. Moldenke s.n. [August 14, 1968] (Ps--167). New
Zealand: W. R. Sykes 202/66 (Nz--171138, Rf).

CALLICARPA DOLICHOPHYLLA Merr.

Additional bibliography: H.-T. Chang, Act. Phytotax. Sin. 1: 293. 1951; Moldenke, Phytologia 15: 21. 1967.

CALLICARPA ELEGANS Hayek

Additional bibliography: Moldenke, Phytologia 16: 364. 1968.
The Ramos & Edaño s.n. [Herb. Philip. Bur. Sci. 46955], distributed as C. elegans, is actually C. formosana var. angustata Moldenke. On the other hand, material of C. elegans has been misidentified and distributed in herbaria as C. micrantha Vid.

Additional citations: WESTERN PACIFIC ISLANDS: PHILIPPINE ISLANDS: Luzon: Ramos & Edaño s.n. [Herb. Philip. Bur. Sci. 45614] (B, Ca--309261, Z).

CALLICARPA ERIOCLONA Schau.

Additional bibliography: Vidal y Soler, Phan. Cuming. Philip. 134. 1885; Gibbs, Contrib. Phytogeog. & Fl. Arfak Mts. 218. 1917; Hocking, Excerpt. Bot. A.6: 455. 1963; Moldenke, Phytologia 16: 364, 381, & 388. 1968.

Quezon describes this plant as attaining a height of 4 m., growing in open cultivated areas, and used as a fish-poison in Mindanao. Gibbs (1917) states that it is common at the edges of forests and in clearings, flowering and fruiting in January. He cites Gibbs 6205 and Lesson s.n. from New Guinea and Teijsmann s.n. from Mansinama Island. He says "This plant is distinguished from C. cana L. by the large, more lanceolate, irregularly serrate leaves, with very white pubescence underneath, and white flowers with longer exerted stamens. C. repanda K. Sch. & Warb. is possibly a synonym of this plant."

The Elmer 18086, distributed as C. erioclona, is actually C. bicolor A. L. Juss.

Additional citations: WESTERN PACIFIC ISLANDS: PHILIPPINE ISLANDS: Luzon: H. H. Bartlett 14453 (Mi), 14629 (Mi), 14698a (Mi). Mindanao: Quezon 1 [Herb. Philip. Forest. Bur. 30258] (S).

CALLICARPA ERIOCLONA var. *PAUCINERVIA* (Merr.) Moldenke

Additional bibliography: Moldenke, Phytologia 16: 364. 1968.

Recent collectors describe this plant as shrubby or as a shrub 2 to 3 1/2 feet tall, with woody stems, growing on low limestone cliffs or at the edges of such cliffs, flowering in March and November, and fruiting in March. The corollas are described as "mauve" and the fruit as black on Henty & Frodin N.G.F.27280 and the fruit as purplish on B. C. Stone 3931.

Additional citations: WESTERN PACIFIC ISLANDS: MARIANA ISLANDS: Guam: B. C. Stone 3931 (W--2410420). PALAU ISLANDS: Peleliu:

Hayne s.n. [1 Nov. 1945] (Mi). MELANESIA: BISMARCK ARCHIPELAGO: New Britain: Henty & Frodin N.G.F.27280 (N).

CALLICARPA ERYTHROSTICTA Merr. & Chun

Additional bibliography: H.-T. Chang, Act. Phytotax. Sin. 1: 280, 294, & 311. 1951; Moldenke, Phytologia 14: 184. 1966.

Chang (1951) cites the type collection of this species and a no. 71998, with the name of the collector or herbarium given only in Chinese characters, and gives its relationship as being with *C. dichotoma* (Lour.) K. Koch.

CALLICARPA FERRUGINEA Sw.

Additional & emended bibliography: J. F. Gmel. in L., Syst. Nat., ed. 13, pr. 1, 2: 246 (1789) and pr. 2, 2: 246. 1796; Moldenke, Phytologia 15: 24. 1967; Moldenke, Biol. Abstr. 49: 1325. 1968.

Recent collectors have found this plant growing in woods and in montane rainforests, at 5000 feet altitude, and describe it as a shrub, the corollas white, the filaments and anthers purple, flowering in June.

Additional citations: CUBA: Oriente: Alain & Clément 877 (W--2288006). JAMAICA: G. R. Proctor 6802 (W--2588117).

CALLICARPA FORMOSANA Rolfe

Additional & emended bibliography: Matsuda, Bot. Mag. Tokyo 27: 273--274. 1913; Prain, Ind. Kew. Suppl. 5, pr. 1, 43. 1921; Kanehira, Formos. Trees, ed. 2, 643--644 & 716, fig. 599. 1936; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 1], 56--58, 62, 71, 86, & 87 (1942) and [ed. 2], 130, 131, 133--135, 140, 157, & 177. 1949; H.-T. Chang, Act. Phytotax. Sin. 1: 270, 282, 283, 286, 287, & 310. 1951; Sonohara, Tawada, & Amano, ed. E. H. Walker, Fl. Okin. 131. 1952; Masam., Sci. Rep. Kanazawa Univ. 4: [Enum. Tracheophyt. Ryukyu Isls. 7:] 46. 1955; Prain, Ind. Kew. Suppl. 5, pr. 2, 43. 1960; Hocking, Excerpt. Bot. A.12: 424 & 425. 1967; Moldenke, Biol. Abstr. 49: 1325, 2290, & 4199. 1968; Moldenke, Phytologia 16: 364--366 & 447. 1968; Moldenke, Résumé Suppl. 16: 11. 1968.

Emended illustrations: Kanehira, Formos. Trees, ed. 2, 643, fig. 599. 1936.

Recent collectors have found this plant growing in open woods and report the vernacular variant "hōrai-murasaki".

Additional citations: WESTERN PACIFIC ISLANDS: RYUKYU ISLAND ARCHIPELAGO: OKINAWAN ISLANDS: Okinawa: Amano 7803 (Ta); Kanashiro 41 (Ta). FORMOSA: Degener & Degener 28978 (N). PHILIPPINE ISLANDS: Luzon: Kienholz s.n. [Los Baños, Nov. 1922] (Mi, Mi).

CALLICARPA FORMOSANA f. *ANGUSTATA* Moldenke

Additional bibliography: Moldenke, Phytologia 16: 365. 1968.

Additional citations: WESTERN PACIFIC ISLANDS: PHILIPPINE ISLANDS: Luzon: Ramos & Edayo s.n. [Herb. Philip. Bur. Sci. 46955]

(Ca--309492).

CALLICARPA FORMOSANA var. *CHINENSIS* P'ei

Additional synonymy: *Callicarpa peii* Chang, Act. Phytotax. Sin. 1: 282--283. 1951. *Callicarpa integerrima* sensu P'ei apud Chang, Act. Phytotax. Sin. 1: 282, in syn. 1951 [not *C. integerrima* Champ., 1853, nor Lindl., 1936].

Additional bibliography: H.-T. Chang, Act. Phytotax. Sin. 1: 282--283. 1951; Moldenke, Phytologia 15: 26. 1967.

Chang (1951) elevates Pei's variety to specific rank, assigns to it a new epithet, *C. peii*, and designates a new type, *L. Teng* 118, from Canton, Kwangtung, China, deposited in the herbarium of the Botanical Institute, Sunyatsen University, Canton. However, it seems to me that under the present edition of the International Rules of Botanical Nomenclature, the type of the taxon remains the same as was originally designated by P'ei, viz., *W. Y. Chun* 5828. Chang (1951) gives the following emended and amplified description of the taxon: "Frutex erectus vel scandens. Ramuli teretes torti, hornotini pilis fulvo-stellato-farinosis obtecti, annotini punctati vel glabrescentes; internodia 5--8 cm longa. Folia subcoriacea elliptica vel late elliptica, 7--15 cm longa 4--8.5 cm lata, apice acuta, basi late acuta vel obtusa, integra, supra asprella nitida atro-viridia vel ad costam nervosque laterales utrinsecus 6--9 subtus elevatos brevissime stellato-puberula, subtus fulvo-stellato-pubescentia et minutissime aureo-glandulosa; petioli 1.5--2.5 cm longi, pilis fulvo-stellatis farinosis obtecti. Cymae supra-axillares sexies dichotomae 5--8 cm diametro; pedunculi 3--5 cm longi, indumento eo petiolorum similiter obtecti; pedicelli 1 mm longi glabri, sicut calyces minutissime aureo-glandulosi; bracteolae lineares 2 mm longae; calycis campanulatis 1 mm longis, tubus truncatus glaber, lobi inconspicui; corollae purpureo-rosae, tubus 2 mm longus, lobi 0.5 mm longi glabri; stamina longe exserta 5 mm longa, antheris ovoidatis 0.6 mm longis, longitudinaliter dehiscentibus; ovarium glabrum, stylis 7--8 mm longis. Fructus purpureo-roseus 2 mm diametro."

Chang cites *R. C. Ching* 6993, *Z. S. Chung* 84897, *Kwangsi Museum* 291, and *W. T. Tsang* 22814 from Kwangsi, *S. K. Lau* 4054 from Kiangsi, and *W. Y. Chun* 5828, *S. K. Lau* 25309 & 26152, and *L. Teng* 118 from Kwangtung. He compares the plant with *C. integerrima* Champ. and *C. pedunculata* R. Br. The *C. chinensis* Hort. which he mentions is actually a synonym of *C. candicans* var. *sumatrana* (Miq.) Moldenke.

CALLICARPA FORMOSANA var. *LONGIFOLIA* Suzuki

Additional synonymy: *Callicarpa pedunculata* var. *longifolia* (Suzuki) Chang, Act. Phytotax. Sin. 1: 287. 1951.

Additional bibliography: H.-T. Chang, Act. Phytotax. Sin. 1: 279, 287, & 311. 1951; Moldenke, Phytologia 15: 26. 1967.

Chang (1951) cites the original publication of this variety as

page "131" in Suzuki's work (1933). He cites the type collection and also a no. 41133 of a collector or herbarium whose name he gives only in Chinese characters.

CALLICARPA FORMOSANA f. PARVIFOLIA Moldenke

Additional bibliography: Hocking, Excerpt. Bot. A.12: 425. 1967; Moldenke, Phytologia 16: 365. 1968; Moldenke, Biol. Abstr. 49: 2290. 1968.

CALLICARPA FULVA A. Rich.

Additional bibliography: Moldenke, Phytologia 16: 365, 451, & 452. 1968.

CALLICARPA FULVOHIRSUTA Merr.

Additional bibliography: Moldenke, Phytologia 16: 365. 1968. Van Steenis (1967) states that this plant is related to C. barbata Ridl., C. havilandii (King & Gamble) H. J. Lam, C. involucrata Merr., C. saccata Steen., and C. superposita Merr.

CALLICARPA GLABRA Koidz.

Additional bibliography: Moldenke, Phytologia 16: 365 & 452. 1968; Moldenke, Résumé Suppl. 16: 12. 1968; Tuyama, Pl. Bonin Isls. 98. 1968.

A very interesting letter from my friend and colleague, Dr. E. H. Walker, dated July 26, 1968, contains a paragraph which is well worth quoting in full here: "In 1966 you verified Field & Lowe 6m as Callicarpa glabra Koidz. and in 1952 Walker & Tawada 6507 as the same. Both are cited in Phytol. 14: 236. 1967. In general they match your description. Field & Lowe 6m has flowers. You describe the corollas as 'resinous punctate on the outside' the anthers 'resinous punctate on both sides'. I do not find such glands on the corolla, only on the anthers. In this specimen the calyx has a single row of relatively large distinctive peltate scales just below the rim. The other specimen, 6507, is in fruit. The calyx lacks the distinctive scales, the fruits are glandular, the leaves distinctly narrower, and the branchlets gray, probably simply having matured beyond the early 'dark purplish or black' condition described. Perhaps these discrepancies are not significant. I have adjusted my description, based in part on yours (since you have seen more specimens than I have), to the variations in these two specimens, except for the peltate scales, which are ignored."

CALLICARPA GRACILIPES Rehd.

Additional bibliography: H.-T. Chang, Act. Phytotax. Sin. 1: 279, 285-286, & 311. 1951; Moldenke, Phytologia 14: 237-238. 1967.

Chang (1951) cites only the type collection of this species.

CALLICARPA HAVILANDII (King & Gamble) H. J. Lam

Additional & emended bibliography: Van Steenis, Blumea 15:

147--149, fig. 2 k. 1967; Moldenke, *Phytologia* 16: 365--366. 1968; B. L. Burt, *Notes Roy. Bot. Gard. Edinb.* 29: 141--155. 1969; Brentzel, *Biol. Abstr.* 51: 1571. 1970.

Van Steenis (1967) says that this plant is related to C. barbata Ridl., C. fulvohirsuta Merr., C. involucrata Merr., C. saccata Steen., and C. superposita Merr.

CALLICARPA HITCHCOCKII Millsp.

Additional bibliography: Moldenke, *Phytologia* 15: 26. 1967.

Byrne calls this plant "boarhog bush" and describes it as 2 m. tall "not very common, only 2 individuals seen; upper surface of leaves dark-green when fresh; used in local medicine as a tonic". Popenoe found it in flower and fruit in October.

Additional citations: BAHAMA ISLANDS: Cat: Byrne 279 (Ws). Eleuthera: J. Popenoe s.n. [October 1966] (Ft--2357).

CALLICARPA HYPOLEUCOPHYLLA Lin & Wang, *Bull. Acad. Sin.* 8: 184--187 & 189, fig. 1, 2, & 5. 1967.

Bibliography: Lin & Wang, *Bull. Acad. Sin.* 8: 184--187 & 189, fig. 1, 2, & 5. 1967.

Illustrations: Lin & Wang, *Bull. Acad. Sin.* 8: 187 & 189, fig. 1, 2, & 5. 1967.

This species, of which the authors give a fine description and splendid illustrations, is based on J. L. Wang 5403, collected at Nanfengshan, at an altitude of 1000--1200 m., Formosa, in February, 1965, deposited in the herbarium of the National Taiwan University. The authors cite also two other (unnumbered) collections: Matsuda s.n. [Tashulin, Jan. 1937] and Simizu s.n. [Chin-suiyin, July 1937] in the same herbarium.

CALLICARPA INTEGERRIMA Champ.

Additional bibliography: H.-T. Chang, *Act. Phytotax. Sin.* 1: 270, 278, 281--282, & 311. 1951; Tingle, *Check List Hong Kong Fl.* 37. 1967; Moldenke, *Phytologia* 16: 364, 366, 381, & 388. 1968.

Chang (1951) cites nos. 310, 902, 2416, 5005, 8034, 21107, 21650, 21799, 25441, & 42751 of collectors and/or herbaria whose names he gives only in Chinese characters.

CALLICARPA INVOLUCRATA Merr.

Additional bibliography: Moldenke, *Phytologia* 16: 366. 1968.

Van Steenis (1967) states that this species is related to C. barbata Ridl., C. fulvohirsuta Merr., C. havilandii (King & Gamble) H. J. Lam, C. saccata Steen., and C. superposita Merr. The Clemenses describe it as a "recumbent shrub, 6 feet tall, fruits cauline, bright red", growing at the wet mouth of a rivulet, fruiting in November, and labeled their collection "Calli-carpa new?"

Additional citations: INDONESIA: GREATER SUNDA ISLANDS: Sabah: Clemens & Clemens 50237 (N).

CALLICARPA JAPONICA Thunb.

Additional & emended bibliography: J. F. Gmel. in L., Syst. Nat., ed. 13, pr. 1, 2: 246 (1789) and pr. 2, 2: 246. 1796; Maxim., Bull. Acad. Sci. St. Pétersb. 31: 77. 1886; Tasiro, Bot. Mag. Tokyo 8: 109. 1894; Shirasawa, Bull. Coll. Agr. Tokyo Imp. Univ. 2: [Jap. Laubh. Winterzust.] 269, pl. 10, fig. 10. 1895; Kuroiwa, Bot. Mag. Tokyo 14: 126. 1900; Kawag., Bull. Kag. 1: 124 & 175. 1915; Simada, Trans. Nat. Hist. Soc. Formos. 31: 12. 1917; E. H. Wils., Journ. Arnold Arb. 1: 186. 1920; Sakaguchi, Gen. Ind. Fl. Okin. 18. 1924; Hottes, Book of Shrubs, ed. 1, 147 & 148. 1928; Sasaki, List Pl. Formos. 350. 1928; Mak. & Nemoto, Fl. Jap. Suppl. 622. 1936; T. H. Everett, Cat. Hardy Trees & Shrubs 16. 1942; Hatus., Journ. Jap. Bot. 24: 81. 1949; Hottes, Book of Shrubs, ed. 5, 168. 1950; Metcalfe & Chalk, Anat. Dicot. 1034, fig. 247 G. 1950; H.-T. Chang, Act. Phytotax. Sin. 1: [269], 270, 272, 296, 299, 303--308, & 310--312. 1951; Hottes, Book of Shrubs, [ed. 6, pr. 1], 168. 1952; Masam., Sci. Rep. Kanazawa Univ. 4: 46. 1955; Hottes, Book of Shrubs, [ed. 6, pr. 2], 168 (1958) and [pr. 3], 168. 1959; Hocking, Excerpt. Bot. A.4: 332 (1962) and A.6: 92. 1963; E. L. D. Seymour, Wise Gard. Encycl., ed. 6, 211. 1963; Ohwi, Fl. Jap. 763--764. 1965; Santamour, Morris Arb. Bull. 16: 51--52. 1965; Hirata, Host Range & Geogr. Distrib. Powd. Mild. 276. 1966; Griffith & Hyland, U. S. Dept. Agr. Pl. Inventory 164: 197 & 229. 1966; Hyland, U. S. Dept. Agr. Pl. Inventory 168: 146 & 149. 1967; Glasau, Sommergr. Ziergeh. 64. 1967; E. Lawrence, South. Gard., ed. 2, 186. 1967; Ornduff, Reg. Veg. 50: 86 & 124. 1967; de Wit, Pl. World High. Pl. 2: 185. 1967; Hocking, Excerpt. Bot. A.11: 205 & 503 (1967), A.12: 424 (1967), and A.13: 569. 1968; Moldenke, Phytologia 16: 360, 366--378, 449, & 451. 1968; Moldenke, Biol. Abstr. 49: 1325 & 4199. 1968; Moldenke, Résumé Suppl. 16: 11, 12, 17, 18, & 25 (1968) and 17: 7 & 8. 1968; Kitagawa, Nat. Sci. & Mus. 36: 124. 1969; Saito & Tachibana, Ecolog. Rev. 17: 135. 1969; Hyland, U. S. Dept. Agr. Pl. Inventory 173: 60 (1969) and 174: 276. 1969; Anon., Biol. Abstr. 51: 11432. 1970; B.A.S.I.C.S. S.30. 1970; "L. R. F.", Biol. Abstr. 51: 11432. 1970; Inaizumi, Jap. Journ. Appl. Entomol. Zool. 14: 29--38. 1970.

Additional & emended illustrations: Shirasawa, Bull. Coll. Agr. Tokyo Imp. Univ. 2: [Jap. Laubh. Winterzust.] pl. 10, fig. 10. 1895; Metcalfe & Chalk, Anat. Dicot. 1034, fig. 247 G. 1950.

It is worth mentioning here that Masamune (1955) regards the "C. japonica Thunb." of Maximowicz (1886), Matsumura (1899 & 1912, insofar as Ryukyu specimens are concerned), Kuroiwa [1900, "p.p. (sic mollis)"], Kawagoe (1915), Simada (1917), Wilson (1920), Sakaguchi (1924), and Makino & Nemoto (1936, insofar as Ryukyu specimens are concerned) as applying to C. japonica var. luxurians Rehd. That of Tasiro (1894) he thinks may actually refer to C. mollis Sieb. & Zucc. Sykes refers to his two collections cited below as having had "mauve" corollas, the fruit "becoming mauve", and fruiting in March. Recent collectors describe the plant as a deciduous shrub, to 1.5 m. tall. They have found it growing in

littoral scrub on Ishigaki Island, while on Miyako Island it is said to be "occasional in Pandanus scrub on limestone", forming a low bush 0.6 m. tall. The corollas on F. R. Fosberg 38312 are said to have been "lilac". Hyland (1969) describes the fruit as "purplish". Lawrence (1967) points out that the "deep purple" fruits, which he erroneously refers to as "berries", begin to color in August and drop off by October in the southern United States. Santamour records the chromosome count as $n = 18$. An additional vernacular variant recorded for the species is the Japanese "ohmurasaki-shikibu". Hirata (1966) records the powdery mildew fungus, Microsphaeraalni, as attacking this plant. Ohwi (1965) describes the plant as common and variable on the islands of Hokkaido, Honshu, Kyushu, and Shikoku. He includes C. japonica f. angustifolia Miq. in its synonymy, but I regard Miquel's name as a synonym of C. japonica var. angustata Rehd.

Ohwi (1965) keys out the Japanese forms of the genus as recognized by him as follows [with the nomenclature brought up to date]:

1. Plants glabrous or thinly pubescent; calyx glabrous, with very short teeth.
 2. Leaf-blades caudate, glandular-dotted on both surfaces.....
C. japonica var. luxurians
 - 2a. Leaf-blades acuminate to acute at the apex, glandular-dotted on the underside only.
 3. Cymes supra-axillary; anthers broadly ellipsoidal.....
C. dichotoma
 - 3a. Cymes axillary.
 4. Corolla 1 mm. long, not glandular-dotted; branches slightly 4-angled; leaves with 12--14 pairs of secondaries.....C. takakumensis
 - 4a. Corolla 3--5 mm. long, glandular-dotted; branches terete; leaf-blades with 5--9 pairs of secondaries.....
C. japonica
 - 1a. Plants densely soft-pubescent to villous; calyx pubescent, 4-fid.
 5. Leaves 5--10 cm. long, rounded to obtuse at the base; branches and leaves with whitish stellate hairs less than 1 mm. long; calyx-lobes lanceolate; flowers 4--5 mm. long, about 10 in a cyme; anthers 1.5--2 mm. long.....C. mollis
 - 5a. Leaves 15--30 cm. long, gradually narrowed at the base; branches and petioles with pinnately branched hairs 1.5--3 mm. long; calyx-lobes linear; flowers about 1.5 mm. long, very many in a cyme; anthers about 0.7 mm. long.C. kochiana
- Chang (1951) regards C. longifolia var. subglabrata Schau. as, in part, a synonym of C. japonica, but I feel that this trinomial belongs only in the synonymy of typical C. longifolia Lam. He cites A. N. Steward 57 and nos. 1631, 2617, 3303, & 10054 of collectors and/or herbaria whose names he gives only in Chinese characters.

Hyland (1967, 1969) cites U. S. Dept. Agr. 266234, 266329, &

304936 as cultivated in Maryland from seed obtained in Japan and K.495 from seed obtained in Korea. Inaizumi (1970) reports that C. japonica is attacked by an as yet unidentified species of the insect genus Aphis.

Material of C. japonica has been misidentified and distributed in herbaria as xC. shirasawana Mak. On the other hand, the Murata 27146 and Tsui 601, distributed as C. japonica, are actually C. japonica var. angustata Rehd., P. C. Hutchinson s.n. [Herb. Univ. Calif. Acc. 38.533-S1] is C. japonica var. luxurians Rehd., Chiao 2617 is C. japonica var. rhombifolia H. J. Lam, Oldham 621 is C. mollis Sieb. & Zucc., and Gressitt 532 & 563 are C. oshimensis var. iriomotensis (Masam.) Hatus.

Additional citations: WESTERN PACIFIC ISLANDS: JAPAN: Honshu: Murata 19185 (Au--274182, N, W--2499907); S. Suzuki s.n. [Jun. 5, 1951] (Se--180745). RYUKYU ISLAND ARCHIPELAGO: OKINAWAN ISLANDS: Kurema: Okuhara & Sunagawa 140 (Rf). Okinawa: Nakamine 275 (Ry, Ry). SAKISHIMA ISLANDS: Iriomote: Masamune & Nakamura 3280 (Tw). Ishigaki: Hatusima 24014 (Ar); Masamune & Suzuki s.n. [June 30, 1935] (Tw). Miyako: F. R. Fosberg 38312 (Rf). CULTIVATED: District of Columbia: T. R. Dudley s.n. [Herb. Nat. Arb. 15432; Pl. Introd. 266234] (Se--228379). New Zealand: W. R. Sykes 4/65 [Herb. Bot. Div. D.S.I.R. 156006] (Ac, Rf), 532/65 [Herb. Bot. Div. D.S.I.R. 156008] (Ac).

CALLICARPA JAPONICA f. ALBIBACCA Hara

Additional bibliography: Moldenke, Résumé Suppl. 16: 17. 1968; Moldenke, Phytologia 16: 368. 1968.

CALLICARPA JAPONICA f. ALBIFLORA Moldenke

Additional & emended bibliography: Hocking, Excerpt. Bot. A.11: 503. 1967; Moldenke, Biol. Abstr. 49: 4199. 1968; Moldenke, Phytologia 16: 368. 1968.

CALLICARPA JAPONICA var. ANGUSTATA Rehd.

Additional bibliography: H.-T. Chang, Act. Phytotax. Sin. 1: [269], 299, 304--307, 310, & 312. 1951; Hocking, Excerpt. Bot. A.13: 569. 1968; Moldenke, Phytologia 16: 368, 371, & 449. 1968; Moldenke, Biol. Abstr. 49: 1325. 1968.

Recent collectors describe this plant as a woody climber, 3--5 feet tall, with a stem diameter of 1 inch, and black fruit, fruiting also in June [in addition to the months previously reported]. Tsang reports it as fairly common in dry sandy soil of roadside thickets. Chang (1951) cites a no. 51357 of a collector or herbarium whose name he gives only in Chinese characters. He compares it with typical C. japonica Thunb., C. bodinieri var. giraldii (Hesse) Rehd., and C. kwangtungensis Chun. Material has been misidentified and distributed in herbaria as C. bodinieri var. giraldii (Hesse) Rehd.

Additional citations: CHINA: Kwangtung: E. D. Merrill 11112

(Ca--301088); W. T. Tsang 21346 (Ca--1011274); Tsui 601 (Ca--612427, N). WESTERN PACIFIC ISLANDS: JAPAN: Honshu: Murata 27146 (W--2409882). Tsushima: Ohashi & Sohma 10018 [Herb. Univ. Tokyo 11023] (W--2594171).

CALLICARPA JAPONICA var. *GLABRA* Nakai

Additional bibliography: H.-T. Chang, Act. Phytotax. Sin. 1: 270 & 310. 1951; Moldenke, Phytologia 16: 369. 1968.

CALLICARPA JAPONICA f. *KIIRUNINSULARIS* Masam.

Additional bibliography: H.-T. Chang, Act. Phytotax. Sin. 1: 299, 304--305, & 312. 1951; Moldenke, Résumé Suppl. 16: 17. 1968; Moldenke, Phytologia 16: 370. 1968.

CALLICARPA JAPONICA var. *LUXURIANS* Rehd.

Additional synonymy: Callicarpa yakusimensis Koidz., Bot. Mag. Tokyo 28: 151. 1914. Callicarpa yakushimensis Koidz. ex Moldenke, Phytologia 5: 100, sphalm. 1954. Callicarpa japonica luxurians Rehd. ex Moldenke, Résumé Suppl. 16: 17, in syn. 1968.

Additional & emended bibliography: Maxim., Bull. Acad. Imp. Sci. St. Pétersb. 31: 77 & 80. 1886; Maxim., Mém. Biol. 12: 513. 1886; Forbes & Hemsli., Journ. Linn. Soc. Lond. Bot. 26: 257. 1890; Mak., Bot. Mag. Tokyo 6: 54. 1892; J. Matsum., Bot. Mag. Tokyo 13: 115. 1899; Kuroiwa, Bot. Mag. Tokyo 14: 126. 1900; Mak., Bot. Mag. Tokyo 18: 46. 1904; Koidz., Bot. Mag. Tokyo 28: 151. 1914; Kawag., Bull. Kag. 1: 124 & 175. 1915; Simada, Trans. Nat. Hist. Soc. Formos. 31: 12. 1917; E. H. Wils., Journ. Arnold Arb. 1: 186. 1920; Sakag., Gen. Ind. Fl. Okin. 18. 1924; Nakai, Trees & Shrubs, ed. 2, 463, fig. 220. 1927; J. Masam., Prel. Rep. Veg. Yak. 115. 1929; Mak. & Nemoto, Fl. Jap., ed. 2, 994 & 996. 1931; Mak. & Nemoto, Fl. Jap. Suppl. 622 & 623. 1936; Takenouchi, Journ. Nat. Hist. Fukuoka 2: 15. 1936; Kanehira, Formos. Trees, ed. 2, 644 & 716, fig. 600. 1936; Nakai in Shirasawa, Icon. Es-senc. Forest. Jap. 2: [Terasaki, Zoku Nipp. Syokubutzuh] fig. 2481 & 2485. 1938; Hara, Enum. Sperm. Jap. 1: 184 & 186. 1948; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 133, 134, 140, 157, 177, & 178. 1949; H.-T. Chang, Act. Phytotax. Sin. 1: 270, 280, 295--296, 299, 304, & 310--312. 1951; Sonohara, Tawada, & Amano, ed. E. H. Walker, Fl. Okin. 131. 1952; Naito, Sci. Rep. Kag. 2: 60. 1953; Ohwi, Fl. Jap. 89. 1953; Masam., Sci. Rep. Kanazawa Univ. 4: 46--48. 1955; Oka, Hokuriku Journ. Bot. 4: 83. 1955; Griffith & Hyland, U. S. Dept. Agr. Pl. Inventory 164: 197 & 229. 1966; Moldenke, Phytologia 16: 360, 367, 370--375, & 377. 1968; Moldenke, Résumé Suppl. 16: 11, 12, 17, 18, & 25 (1968) and 17: 8. 1968.

In his 1949 work, Hatusima regards the name, C. japonica var. kotoensis (Hayata) Masam., as the correct designation for the taxon here being discussed, but Rehder's varietal epithet was validly published 24 years earlier!

Masamune (1955), Ohwi (1965), and Chang (1951) regard C. australis Koidz. as a synonym of C. japonica var. luxurians and in

this opinion they may well be correct. Masamune regards the "C. japonica Thunb." of Maximowicz (1886), Matsumura (1899 & 1912, insofar as Ryukyu specimens are concerned), Kuroiwa [1900 "p.p. (sic mollis)"], Kawagoe (1915), Simada (1917), Wilson (1920), Sakaguchi (1924), and Makino & Nemoto (1936, insofar as Ryukyu specimens are concerned) as actually referring to this same variety. Kanehira (1936) and Chang (1951) regard C. kotoensis Hayata as a valid species, with C. antaensis Hayata as a synonym. I regard C. antaensis as a synonym of C. longifolia Lam.

Matsumura (1955) cites the Maximowicz work (1886) as "1887" and Hara's 1948 work as "1949".

Recent collectors describe C. japonica var. luxurians as a shrub to 15 feet tall, growing among other shrubs on open slopes, in hedges along roadsides (on Okinawa), and common in secondary thickets (on Yonakuni Island), at 100--150 m. altitude, flowering in September, and fruiting in August (in addition to the months previously reported). The corollas on E. H. Walker 8452 are described as having been "pale lavender" and the anthers yellow. Additional vernacular names and variant orthographies recorded for the plant are "omurasakisikibu", "tosamurasaki", "tosa-murasaki", "yakushima-ko-murasaki", "yakusima-komurasaki", and "yakusima-ko-murasaki".

Ohwi (1965) says "July--Sept. Warmer districts; Shikoku, Kyushu" for what he regards as C. shikokiana Mak. and "July--Aug. Lowlands near the sea; Honshu, Shikoku, Kyushu; rather common" for what he regards as the true C. japonica var. luxurians. For the latter Masamune (1955) gives the overall distribution as "Yakusima, Shikoku, Kyushu, Itukusima, Syodosima", but other authors record it also from Tanegasima, Kutinoerabu, Takesima, Nakanosima, Suwanose, Takarazima, Amani-osima, Okati, Iheyazima, Okinawa, Minami-daitozima, Miyako, Isigaki, Iriomote, Sirahama, and Komi.

The P. C. Hutchinson s.n. [Herb. Univ. Calif. Acc. 38.533-Si], cited below, was cultivated in California from seeds collected in Poland, while the U. S. Dept. Pl. Invent. 235498 was cultivated in Maryland from the seeds of J. L. Creech 508 collected in Japan.

The Hatusima 24014 and Nakamine 275, distributed as C. japonica var. luxurians, are actually merely vigorous specimens of typical C. japonica Thunb.

Additional citations: WESTERN PACIFIC ISLANDS: RYUKYU ISLAND ARCHIPELAGO: SATSUNAN ISLANDS: Yakushima: Tagawa & Konta 75 (N, W--2499881). OKINAWAN ISLANDS: Kunigami: Elliott & Nakamine 658 (W). Okinawa: Kimura & Hurusawa 61 (W--2126227); R. Moran 5076 (W--2186572); E. H. Walker 8452 (W). SAKISHIMA ISLANDS: Iriomote: Fukuyama s.n. [Herb. Univ. Imp. Taihok. 7326] (Tw); Yamazaki s.n. [Dec. 26, 1963] (Tk). Ishigaki: Masamune & Suzuki s.n. [Jul. 1, 1935] (Tw). Yonakuni: Hatusima 24532 (Ar). CULTIVATED: California: P. C. Hutchinson s.n. [Herb. Univ. Calif. Acc. 38.533-Si] (N).

CALLICARPA JAPONICA var. RHOMBIFOLIA H. J. Lam

Additional bibliography: Moldenke, *Résumé Suppl.* 16: 11. 1968; Moldenke, *Phytologia* 16: 368 & 376--378. 1968.

Recent collectors describe this plant as a shrub, 5--15 feet tall, growing in thickets and on rocky slopes along roadsides. The corollas are described as "white" on Chiao 2617 and the fruits as purple on E. H. Wilson 8109.

Material of this variety has been misidentified and distributed in herbaria as C. oshimensis Hayata. On the other hand, the J. F. Rock 2523, distributed as this variety, is actually C. bodinieri Léveillé.

Additional citations: WESTERN PACIFIC ISLANDS: JAPAN: Honshu: Okamoto s.n. [July 17, 1924] (Ws). RYUKYU ISLAND ARCHIPELAGO: OKINAWAN ISLANDS: Okinawa: E. H. Wilson 8109 (W--1370942).

CALLICARPA JAPONICA var. TAQUETII (Léveillé) Nakai

Additional bibliography: Moldenke, *Known Geogr. Distrib. Verbenac.*, [ed. 1], 57 & 87 (1942) and [ed. 2], 133 & 178. 1949; H.-T. Chang, *Act. Phytotax. Sin.* 1: 295. 1951; Moldenke, *Phytologia* 16: 378. 1968.

Chang (1951) regards C. taquetii Léveillé as a synonym of C. dichotoma (Lour.) K. Koch.

CALLICARPA KINABALUENSIS Bakh. & Heine

Additional bibliography: Moldenke, *Phytologia* 16: 378--381. 1968; Moldenke, *Résumé Suppl.* 16: 17. 1968.

Additional citations: INDONESIA: GREATER SUNDA ISLANDS: Sabah: Clemens & Clemens 31900 (N).

CALLICARPA KINABALUENSIS var. ENDERTI Moldenke

Additional bibliography: Moldenke, *Phytologia* 16: 380--381. 1968; Moldenke, *Résumé Suppl.* 16: 17. 1968.

CALLICARPA KINABALUENSIS var. TONSA Moldenke

Additional bibliography: Moldenke, *Phytologia* 16: 381. 1968; Moldenke, *Résumé Suppl.* 16: 17. 1968.

CALLICARPA KOCHIANA Mak.

Additional synonymy: Callicarpa loureiri var. laxiflora Chang, *Act. Phytotax. Sin.* 1: 276--277. 1951. Callicarpa roxburghii P'ei apud H. T. Chang, *Act. Phytotax. Sin.* 1: 276, in syn. 1951.

Additional & emended bibliography: Nakai in Nakai & Koidz., *Trees & Shrubs Indig. Jap.*, ed. 2, 1: 458--459, fig. 218. 1927; Kanehira, *Formos. Trees*, ed. 2, 645 & 716, fig. 601. 1936; Metcalfe & Chalk, *Anat. Dicot.* 1036, fig. 248 F. 1950; H.-T. Chang, *Act. Phytotax. Sin.* 1: 270, 271, 274, 276--277, 310, & 311. 1951; Tingle, *Check List Hong Kong Pl.* 37. 1967; Moldenke, *Résumé Suppl.* 16: 10--13, 17, & 18. 1968; Moldenke, *Biol. Abstr.* 49: 7688. 1968; Moldenke, *Phytologia* 16: 447--448 & 454. 1968.

Emended illustrations: Kanehira, *Formos. Trees*, ed. 2, 645, fig. 601. 1936.

Ohwi (1951) keys out the Japanese species of this genus known to him and his key (modified to bring the nomenclature up-to-date) is reproduced on page 42 of the present installment of notes.

Chang (1951), for some reason unknown to me, places C. americana Lour. in the synonymy of C. kochiana, but it seems to me that previous authors are correct in placing Loureiro's name in the synonymy of C. candicans (Burm. f.) Hochr. Chang cites T. M. Tsui 48 as well as nos. 146, 168, 262, 315, 317, 434, 609, 658, 815, 989, 1059, 1507, 1622, 1639, 2350, 2987, 3174, 4020, 4456, 4993, 5870, 9999, 10780, 11049, 16581, 20436, 21167, 21573, 21889, 25392, 25807, 31600, 32434, 40488, 41202, 50049, 60088, 60383, & 86212 of collectors and/or herbaria whose names, unfortunately, he gives only in Chinese characters. He describes his var. laxiflora as follows: "A typo recedit foliis angustioribus oblong-lanceolatis 11--15 cm longis, 3.5--4.5 cm latis, nervis paucioribus, utrinsecus 6--8, cymis laxis paulo diffusis, pedunculis brevioribus 5 mm longis, pedicellis longioribus 2 mm longis". The variety appears to be based on H. Fung 20404 from Hainan Island, collected in 1932, and deposited in the herbarium of the Botanical Institute of Sunyatsen University, Canton, China.

Additional citations: HONGKONG: Taam 1507 (N).

CALLICARPA KWANGTUNGENSIS Chun

Synonymy: Callicarpa brevipes sensu Hand.-Mazz. apud H.-T. Chang, Act. Phytotax. Sin. 1: 306, in syn. 1951 [not C. brevipes (Benth.) Hance, 1866, nor Hance, 1886].

Additional bibliography: Hand.-Mazz., Symb. Sin. 7: 901. 1936; Rehd. in Sarg., Pl. Wils. 3: 369. 1936; H.-T. Chang, Act. Phytotax. Sin. 1: 300, 306--307, & 312. 1951; Moldenke, Phytologia 16: 448--449. 1968.

Chang (1951) includes in the synonymy of this species a "Callicarpa japonica var. angustata Rehd. in Sarg., Pl. Wils. 3: 369. 1936, pro parte", but I see no justification for including this trinomial here since it applies to a perfectly valid and accepted variety of C. japonica, substantiated by the type collection. Chang cites the type collection of C. kwangtungensis as well as A. Henry 6679 and nos. 268, 1423, 2496, 2775, 4593, 4703, 4704, 10441, 20797, 22735, 30702, 30715, 52934, 54669, 54759, 83768, & 90519 of collectors and/or herbaria whose names, unfortunately, he gives only in Chinese characters.

CALLICARPA LINGII Merr.

Additional bibliography: H.-T. Chang, Act. Phytotax. Sin. 1: 271, 299, 303, & 312. 1951; Moldenke, Phytologia 16: 452--453. 1968.

Chang (1951) cites only the original collection of this species.

CALLICARPA LOBO-APICULATA Metc.

Additional synonymy: Callicarpa loboapiculata Metc. ex H.-T.

Chang, Act. Phytotax. Sin. 1: [269]. 1951.

Additional bibliography: H.-T. Chang, Act. Phytotax. Sin. 1: [269], 274, 277, 278, 308, 309, & 311. 1951; Moldenke, Phytologia 16: 453-454. 1968; Moldenke, Résumé Suppl. 16: 10. 1968; Moldenke, Biol. Abstr. 49: 7688. 1968.

Chang (1951) cites Tse Hai 485 as well as nos. 728, 752, 2673, 2997, 5519, 5667, 6371, 10189, 21307, 22393, 22610, 22779, 40427, 73173, 75377, & 96334 of collectors and/or herbaria whose names he gives only in Chinese characters.

CALLICARPA LONGIBRACTEATA Chang, Act. Phytotax. Sin. 1: 277--278. 1951.

Bibliography: H.-T. Chang, Act. Phytotax. Sin. 1: 271, 274, 277--278, & 311. 1951; G. Taylor, Ind. Kew. Suppl. 13: 21. 1966; Moldenke, Résumé Suppl. 16: 10. 1968.

Because of the extreme rarity of this journal in libraries, Chang's original (1951) description of this taxon is repeated herewith: "Frutex 3 m altus. Ramuli teretes hornotini dense fulvo-tomentosi; annotini glabrescentes cinereo-nigrescentes lenticellati. Folia oblonga vel elliptica 15--20 cm longa, 5.5--8 cm lata, apice acuminata, basi rotundata vel obtusa simul paulo obliqua, margine supra medium remorissime denticulata, supra costis nervisque exceptis glabra in sicco nigrescentia, subtus tomentosoincana; costa supra plana subtus elevata, nervis lateralibus utrinsecus 13--16 supra conspicuis subtus elevatis; petioli crassi 1.5--2.5 cm longi tomentosi. Cymae diffusae sexies dichotomae 6--9 cm latae tomentosae, pedunculis 3--5 cm longis; bracteae foliaceae lanceolatae 3--4 cm longae, 8--12 mm latae, pilis atque iis foliorum similiter obtectae, nervis utrinsecus 8--10, stipitibus 8--10 mm longis suffultae; bracteolae subulatae; calycis stellato-pubescentis vel puberulis, tubus 1.5 mm longus, lobi 4-dentati, dentibus subulatis 1 mm longis; corollae stellato-pubescentes, tubus 1.5 mm longus, lobi 0.5 mm longi; stamina exserta, filamentis 4--5 mm longis, antheris 0.5 mm longis longitudinaliter dehiscentibus; ovarium glabrum, stylo 6--7 mm longo, stigmatibus dilatatis. Fructus 1.5 mm diametro."

The type and apparently only known collection of this species is W. Y. Chun 5121, collected in Hongkong in 1926 and deposited in the herbarium of the Botanical Institute of Sunyatsen University, Canton, China. The author compares it (in Chinese) with C. kochiana Mak., C. lobo-apiculata Metc., and C. macrophylla Vahl.

CALLICARPA LONGIFOLIA Lam., Encycl. Méth. 1: 563. 1785 [not C. longifolia Auct., 1965, nor Benth., 1962, nor Diels, 1916, nor Hance, 1890, nor Hemsl., 1916, nor Hook., 1932, nor L., 1820, nor Roxb., 1827, nor "sensi Hemsl.", 1949, nor "sensu L.", 1966, nor "sensu Mori", 1962].

Synonymy: Mamanira alba Rumph., Herb. Amboin. 4: 124, pl. 49. 1750. Hedyotis arborescens Noronha, Verh. Batav. Genootsch. 5, ed. 1, art. 14: 17. 1790. Callicarpa foliis lato-lanceolatis utrinque glabris, superne serratis Vahl ex Willd., Sp. Pl., 1:

621, in syn. 1797. Callicarpa (longifolia) foliis longis lanceo-
latis subdentatis utrinque viridibus, corymbis parvis axillaribus
Lam. ex Willd., Sp. Pl. 1: 621, in syn. 1797. Callicarpa lanceo-
laria Hort. ex Link, Enum. Pl. Berol. Alt. 1: 124, hyponym. 1821
[not C. lanceolaria Roxb., 1814]. Amictonis japonica (Thunb.
auct.) Raf., Sylv. Tellur. 161. 1838. Callicarpa japonica
"Thunb. auct." ex Raf., Sylv. Tellur. 161, in syn. 1838 [not C.
japonica Hort. ex Pritzel, 1866, nor Hort. ex Moldenke, 1936, nor
L. f., 1966, nor Matsum., 1923, nor Miq., 1927, nor Thunb., 1784].
Callicarpus longifolia Vahl apud Hassk., Cat. Pl. Hort. Bogor.
Cult. Alt. 136. 1844. Callicarpus longifolia Blume apud Hassk.,
Cat. Pl. Hort. Bogor. Cult. Alt. 136, in syn. 1844. Callicarpa
blumei Zoll. & Moritz, Syst. Verz. Zoll. 53. 1845-1846. Calli-
carpa longifolia α subglabrata Schau. in A. DC., Prodr. 11: 645.
1847. Callicarpa lanata β uberior Miq., Fl. Ned. Ind. 2: 887.
1856. Callicarpa purpurea Hort. ex Lem., Ill. Hort. 6: pl. 202,
in part. 1859 [not C. purpurea Hort. ex Moldenke, 1941, nor A. L.
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1885. Callicarpa longifolia var. pubinervis Kuntze, Rev. Gen.
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1919. Callicarpa longifolia var. uberior Miq. ex H. J. Lam, Ver-
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1919. Callicarpa cuspidata Hassk. apud Bakh. in Lam & Bakh., Bull.
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3: 26. 1921. Callicarpa longifolia Blume apud Moldenke in Fedde,
Repert. Spec. Nov. 40: 96, in syn. 1936. Callicarpa americana
Hort. ex Moldenke in Fedde, Repert. Spec. Nov. 40, 96, in syn.
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Illustrations: Lam., Tabl. Encycl. Méth. [Illustr. Gen.] 1: pl. 69, fig. 2. 1791; Lindl., Veg. Kingd. 663. 1846; Koord. & Vallet., Atlas Baumart. Java 5: pl. 275. 1914.

Small slender bush or shrub, 0.6--5 m. tall, erect, woody, glabrate, sometimes rather straggling, rarely becoming a small slender tree to 10 m. tall or even a climber [e.g., K. Larsen 10267], the youngest parts sometimes slightly stellate-tomentose or glabrate throughout; stems to 6 inches in circumference and 1--10 cm. in diameter at breast height, smooth except for a few scattered pustules; branches comparatively slender, more or less tetragonal, mostly weak and spreading, usually glabrous; branchlets medium to slender, obtusely tetragonal, subglabrescent; each node of both the branches and branchlets usually marked by a circumferential ridge or scar resembling a stipule-scar, most conspicuous on glabrous branches; principal internodes 1.5--6 cm. long; leaves decussate-opposite; petioles rather slender, 4--21 mm. long, subglabrescent; leaf-blades very thin-chartaceous or membranous, varying from yellowish-green or light-green on both surfaces to rather dark-green on both surfaces or lighter beneath, lanceolate or broadly lanceolate to oblong-lanceolate or oblong, 6--18 cm. long, 2--6.5 cm. wide, long-acuminate and often somewhat caudate at the apex, more or less irregularly and very shortly dentate to serrulate or minutely denticulate-serrulate along the margins (except at the base), rarely subentire, attenuate into a more or less acuminate base, usually glabrate or obscurely strigillose above (glabrous or subglabrous when mature), glabrous or subglabrate beneath or thinly pubescent with simple or stellate hairs (the hairs usually simple on the lamina and stellate on the larger venation), marked with numerous, tiny, closely appressed, circular or elliptic, concave, golden-yellow scales; midrib slender, often

more or less furfuraceous beneath; secondaries slender, 7--10 per side, prominent beneath, arcuate-ascending, but often only very slightly arcuate, usually rather obscurely anastomosing at the margins; vein and veinlet reticulation delicate; inflorescence axillary or supra-axillary; cymes opposite, solitary, short- or rather long-pedunculate, 1.5--7 cm. long, 1--6.5 cm. wide, many-flowered, dense or slender and lax, several times dichotomous, often extremely loose-spreading with the angle of the primary furcations about 90°, bracteolate, very much shorter than the subtending leaves, subglabrescent; peduncles very slender, 6--17 mm. long; pedicels very slender, 0.5--2 mm. long; bractlets linear, 1--3 mm. long; prophylla minute, setaceous, pubescent or subglabrate; calyx campanulate, 1--1.3 mm. long, about 1.1 mm. wide, rather inconspicuously 4-costate, glabrous or subglabrate, its rim subtruncate, very shortly 4-toothed; corolla infundibular or hypocrateriform, purple, violet, rose-purple, or lavender to pink, pale-mauve, blue, whitish, or white, its tube broadly cylindrical, about 1.3 mm. long, ampliate above, often somewhat granulose on the outer surface, scarcely pubescent, its limb 4-parted, the lobes erect or incurved, oblong-lingulate, rounded at the apex, usually somewhat granulose on the outer surface; stamens 4, inserted at the very base of the corolla-tube, exerted, pink or yellow; filaments filiform, about 3.1 mm. long, glabrous; anthers broadly oblong, about 0.5 mm. long and wide, the thecae light-yellow; pollen yellow; pistil long-exserted and surpassing the stamens (in ♂); style capillary, about 4.7 mm. long, pink, glabrous, ampliate above into the stigma; stigma depressed-capitate or peltate, white, about 0.5 mm. wide; ovary subglobose, about 0.5 mm. long and wide, densely granulose or glandular, not hairy, 4-celled; fruiting-calyx light, shallowly cupuliform or patelliform, about 2 mm. wide, mostly subglabrate, its rim subtruncate, frequently irregularly split; fruit globose or subglobose, small, mostly white when mature, rarely dark-pink, green when immature, 2.1--2.5 mm. long and wide, glabrous, 4-seeded.

This extremely variable and much misunderstood species occurs, in its typical form from eastern Pakistan and India through tropical southeast Asia, north to southern China and Hainan Island, and east to Indochina, Malaya, the Philippines, the Moluccas, New Guinea, New Ireland, and Queensland. It is widely cultivated and has been introduced in Peru and Madagascar. The type was collected by Pierre Sonnerat in the vicinity of Malacca before 1783 and is deposited in the Lamarck Herbarium at the Muséum National d' Histoire Naturelle at Paris. Because of the abundant confusion and misinterpretation of this taxon, Lamarck's original description is worth repeating here: "Callicarpa à feuilles longues. Callicarpa longifolia. Callicarpa foliis longis lanceolatis subdentatis, utrinque viridibus, corymbis parvis axillaribus. N. C'est une espèce bien remarquable par la forme de ses feuilles, & qui est presque entièrement glabre dans toutes ses parties. Ses feuilles sont opposées, pétiolées, longues-lancéolées, pointues, à peine denticulées en leurs bords, minces, molles, vertes des deux côtes, & presque tout-à-fait glabres, excepté dans leur jein-

esse. Elles ont sept à huit pouces de longueur, sue une largeur d'un pouce & demi. Les fleurs sont petites, disposées comme dans les précédentes; elles ont un calice court, presque tronqué ou à quatre dents peu sensibles; une corolle infundibuliforme & quadri-fide; quatre étamines une fois plus longues que le corolle; & un ovaire supérieur, dont le style aussi long que les étamines, est terminé par un stigmate en tête tronquée. Cette plante croît dans les environs de Malac, & nous a été communiquée par M. Sonnerat." In his 1791 work he says of it "C. foliis longis lanceolatis subdentatis utrinque viridibus, cymis axillaribus laxiusculis. Circa urbem Malacam. $\bar{\eta}$ Fol. 8-pollicaria. Pl. distinctiss. à Callic. japonica Thunbergii."

The species has been found growing in forests, high forests, and rainforests, dense or evergreen forests, fairly wet open tall secondary or virgin forests, clearings, secondgrowth, rainforest regrowth, secondary scrub, small openings in rainforests, and open slightly shaded spots in primary forests, on level land or river gravel, hills and grassy hillsides, and slopes, along lanes and streams, and at abandoned campsites and scrub-edge, from sealevel to 2000 meters altitude, flowering and fruiting in every month of the year.

Lei describes it as "abundant scattered shrubs in sandy soil on dry level land along roadsides" on Hainan Island. Ridley (1909) avers that it is "Common in the low country" of Malaya. Hoogland reports it as "fairly common in low regrowth" in Papua, while Brass says that it is "plentiful in rainforest regrowths" and "common in rainforests" in the same land. Kanehira & Hatusima found it to be "fairly common at the edge of rainforests" in neighboring New Guinea and give its general distribution as "India through Malaya to New Guinea, northward to Formosa". In Thailand it is said by Smitinand to be "common along paths in evergreen jungle", Thaworn says "common in lowland evergreen forests", and Boonchuai, Bunnak, and Suvarnakoses all refer to it as "scattered in evergreen jungles". Lau tells us that on Hainan it is "fairly common in moist level land and clay soil of meadows". Panigrahi & Joseph (1966) says that the species is scarce in Nefa and cites his no. 14974. Matthew (1966) records it from West Bengal. Deb. Gupta, & Mallick (1968) tell us that in Bhutan it is found on the "outskirts of forests".

Watt (1889) says of it "A shrub of the Malaya Peninsula, Penang, and Nicobar Islands"; Ridley (1923) says "Tropical Asia", Bakhuizen van den Brink (1924) "southeast Asia and tropical Australia", and Domin "from Malacca through Malaya to northeast Queensland". Hooker & Mueller (1870) regarded it as native and "widely spread over the Indian Archipelago, extending into India to Khasia and East Bengal". P'ei (1947) records it from Szechuan, China, while Prain (1903) records it from "C[entral] Bengal; Tippera; Chittagong". Several authors record it from "Prince of Wales Island", but it is not certain if they are referring to the island of this name in Penang or the one in Torres Strait near Australia.